ANALYSIS ON DEFINITIONS OF INNOVATION FOR PROCESS INNOVATION AND VALUE CREATION TO CONTRIBUTE SME PERFORMANCE

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Abstract

The purpose of the research is to analyze the definitions of innovations to select the suitable definition to explore and design process with value creation to address lapses related to firm performance and contribute to firm performance. For that a small concept for process innovation with dimensions of ideation and organizing structures are established. To demonstrate pragmatic validity of the concept of process innovation, two cases on successfully implemented designed process were established with content derive from designed process. The processes are identical with each other representing the population of process and a single successfully implemented designed process ensure transferability. The key findings/key themes of intended results, value creation and organizing structures demonstrates pragmatic validity of the concept and found to be suitable for deployment in various applications and fields. The concept of process innovation is found to be deployable to various types of challenging and novel issues and may impact real world scenario in future. The process innovation becomes function as foundation for theories/concepts on innovation and contributing for advancement of knowledge in the area of innovation.

Keywords

process, resource, value, rational, fairness

1 Introduction

The Schumpeterian theory of innovation (Schumpeter, 1934 (2008) paved the way for academic research on innovation capability (Saunila, 2020) . entrepreneurial orientation (Reshi, 2025, Miller, 1983; Cvin and Slevin, 1989; Lumpkin and dess, 1996) and Business Model Innovation (BMI) with much attraction from scholars and practitioners (Huang and Ichikohji, 2023; Latifi et al., 2021; Karimi and Walter, 2016 and Lambert and Davidson, 2013).

However, the research findings on innovation/innovation capability/BMI (Tsakalerou et al., 2025 and Latifi et al., 2021) reveals that there are failures on deployment of concept/model in SME. The study of (Jeganathan et al., 2021; Nishantha. 2018; Abeyaratna, 2021 and Abeyaratna and Chamara; 2021) reveals that Sri Lankan SMEs face challenges/barriers/failures, i.e., lapses with regard to firm performance.

Foundation for any concept/theory should be built on clear definition based on the clear understanding and analysis of observational results. To determine whether the definition is clear, it is required to review existing definitions and select the best for further exploration. In this research the definition is required to understand how does it contribution to firm performance. In case, if there are any lapses with regard to contribution to firm performance the definition should pave the way for how does these lapses are to be addressed.

Firm erformance depends on products/services which is consequent of the sequence and interaction of processes (ISO 9001, 2015). Process is contributing to firm performance. Hence it is required to identify how process is defined. Process is a set of interrelated and interacting activities that convert inputs into intended results (ISO 9000, 2015). For contribution to firm performance process(es) should be designed with value creation focusing on firm performance. i.e., to reduce cost and satisfy customers/employees. To address the lapse, it is essential to determine the intended results of the soliton for the lapse and for the intended results process should be designed with value creation. Hence the process innovation takes place based on process designing, i.e., designing new or change process with value creation. Once the process is designed, activities of process is clear by location and sequence. The knowledge creation/knowhow development should take place on these activities and performing activities with the created knowledge result in new object with values, i.e., product innovation

Research on SMEs innovation management process by (Dossou-Yovo and Keen, 2021) reveals that innovation in small businesses tends to focus mainly on identifying resources (Romijn et al, 2002; Cho & Lindermann, 2020 and Harel et al., 2020), and seems to consider the process as a “black box” that ignores how the type, needs and availability of resources arise throughout the innovation process (Pustovrh et al, 2017 and McDowell et al. 2018).

Further, their findings reveal that the tends to be on the process of new product development with most works focused on identifying organizational and success factors (Dunne et al., 2016 and Kim et al., 2018). Hence, it is required to explore the process and determine key findings to address lapses related to firm performance.

The findings from data on exports reveals that the GDP contribution of SME to the national economy is high (EDB, 2021) and exports from Sri Lanka is stagnated in various sectors. Hence, the lapses related to firm performance are to be resolved for contribution to national economy. If these lapses are not resolved, then the economy is affected by SME performance and the affected economy again affects entire SMEs. It will bring social unrest and the people of Sri Lanka will face a lot of issues and thus it is essential to resolve lapses related to SME performance.

The purpose of the research is to establish contextualized concept of process designing and demonstrate pragmatic validity of the concept to define and derive different terms for definitions on innovation/knowledge creation for effective deployment of the concept in future theory/practice. It is required to answer the research questions of how to establish contextualized concept of process designing and how to demonstrate pragmatic validity of the contextualized concept of process design. The study aims to explore the key findings of process designing to define/derive terms on innovation/knowledge creation for future research/practice and to address the lapses of firm performance to contribute to SME performance because the firm performance depends on products/services which is consequent of sequence and interaction of processes

The outcome of the research provides insight on contribution for advancement of the literature on innovation with clear demarcation between innovation and knowledge creation with definition of terms on innovation/knowledge creation. The study is also provided framework on finding solution to the lapses related to SME firm performance. The concept for process designing is established with design science and qualitative research methodology is used to demonstrate pragmatic validity of the concept which ensure pragmatic validity of definitions for innovation/knowledge creation. The entire research is confined to actionable knowledge (Miles,

2017) in pragmatism paradigm. Two cases of designed processes are to be used to derive findings for analysis and interpretation. The findings ensure transferability/generalizability since process is identical with each other and representing the population of the process.

In the materials section, the definitions on innovation is to be analyzed and concept of process innovation is to be contextualized with exploration of academic silos focusing on actionable knowledge, and the method section provides insight on how to collect sample and interpret with content extracted from case of a successfully implemented deigned process/lapse related process to demonstrate the pragmatic validity of the concept. The result section describes the interesting findings derived from cases. In the discussion section, findings are to be interpreted and achievement of research objectives are to be discussed together with interpretations, contributions, implications, limitations and future research, and recommendations. The research is to be concluded with how the research questions are answered with contributions, and implications for future research/practices/ policy making.

2 Literature review

In the literature review, the dimensions of variables of concept/conceptual framework of process designing/process innovation are to be determined. The variables are process innovation, value creation and firm performance are described herein.

2.1 Process designing/process innovation

To determine dimensions of process designing, it has to be defined properly. To avoid ambiguity on innovation, the innovation is classified into process innovation and product innovation. The dimensions of process innovation are ideation and organizing structures.

2.1 Definitions and dimensions of process innovation

The review of definitions of innovation/innovation capability is given in Table 1. The definition for innovation is considered for an object which include process. In practice, these two dimensions are different. The object is related to product innovation which is different from process innovation.

In order to overcome the lack of knowledge on innovation (Raisal et al., 2019 and Ranawala, 2023) and deploy knowledge to design process, it is essential to distinguish the definitions of innovations which are related to process and products. If it is not distinguished, then the communications are not effective and make SME in ambiguous with the definition of single word "innovation". The process will remain in black box and to shed light on the process, the term process innovation appears with its dimensions and this knowledge should be communicated and disseminated for innovation and contribution to firm performance.

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Table 1-Definition matrix on Innovation/Innovation Capability –Meta Analysis

Term	Definition	Author(s)
Innovation capability	Innovation capability is considered as a valuable asset for firms to provide and sustain a competitive advantage and in the implementation of overall strategy	Rajapathirana and Hui, 2018
Innovation capability	Innovation capability is the ability to create better or more effective products, processes, services, technologies, or ideas that are accepted by markets, governments and society	Zhang and Merchant, 2020
Innovation capability	Innovation capability in the context of open innovation is the ability of companies to acquire, generate and apply knowledge	Water et.al, 2021

Innovation	A new or changed entity realizing or redistributing value	ISO 56000, 2020
Innovation	New or changed *object* realizing or redistributing value. *Object* is anything perceivable or conceivable, example product, service, process, person, organizations, system resources, material, non-material or imagine state of the organization	ISO 9000, 2015
Innovativeness	Being inventive and experimental; using fresh insights, novel thinking, and new knowledge to create or improve products, services and processes	Lumpkin and Pidduck (2021)

To contribute to the firm performance, process is to be designed with value creation, i.e., with cost reduction satisfying customers/employees. Process is subset of an object. The definition of new or changed object realizing or distributing value (ISO, 9000, 2015) cover a wider range including process. The objects (products/services) are outcome of process performance and it is product innovation. To bring objects from process, i.e., (for product innovation) the knowledge creation should take place on activities of process and these activities should be performed with the resource (including created knowledge). Process innovation is beginning with generation of ideas with ideation (Bolade and Sindakis, 2020) and derive tree diagram for the structure of the activities of process (i.e., process, sub processes and interested parties) for the processes with interested parties. The sequence and interaction of activities of each sub-process and sequence and interaction of sub processes should be derived for both processes with interested parties as well as processes without interested parties. The knowledge creation takes place on activities to perform and bring objects which is interfacing and mediating in between process innovation and product innovation. Product

Innovation contributes to firm performance. The sequence and interaction of activities are given in the Figure 1.

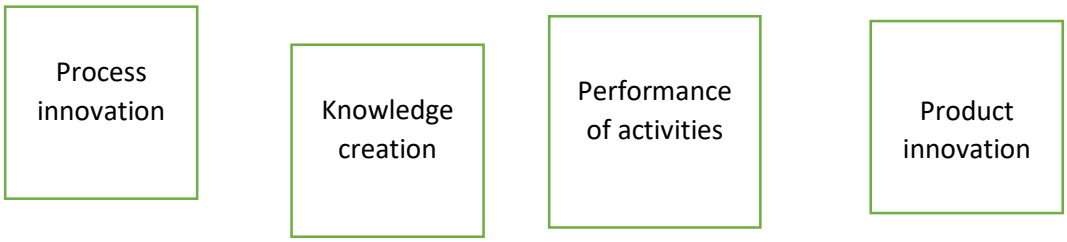

Figure 1 – Sequence and interaction of activities of innovation and knowledge creation

2.2 Value creation and firm performance

The value creation concept is established by (Bowman and Ambrosini, 2000) with value capture (Bowman and Ambrosini, 2000) which is determined by the perceived bargaining power between buyers and sellers. For a firm value creation should be focused to capture value during bargaining with customer satisfaction. To satisfy the customers, the firm should satisfy the employees who are satisfying the customers and reduce the cost of products/services. If the employees are not satisfied, they will not be happily working and it may reflect on the products/services and hence the value creation of firm is depending on cost reduction, customer satisfaction and employee satisfaction. These three dimensions are derived from the study of (Ramayah et al., 2011) which are return on investment, financial performance, sales growth, productivity, customer satisfaction and employee satisfaction.

The value creation is functioning as a link between designed process and firm performance. The value of designed process depends on how extent it satisfies the requirements of interested parties (employees) to perform activities, fairness-based value. The resources should be used economically to reduce cost and the process should be designed based on resource-based value. Finally it should satisfy the requirements of interested parties of the organization for it survival and thus it should function rationally.

The empirical review; of value creation dimensions are resource-based value, rational based value and fairness-based value which have positive relationship with firm performance derived from The empirical review of value creation dimensions are resource-based value (Newbert, 2008), rational choice value (Goll and Rosheed, 1998 and Yu and Raksong, 2019) and fairness based value (Waheed et al., 2002) which have positive relationship with firm performance derived from resource-based view (Barney, 1991), rational choice theory (Uzonwanne, 2016) and stakeholder theory (Freeman. 2023) respectively. The dimensions of value creation in the process design side are resource-based value, fairness-based value and rational based value. These are to be focused on bringing value to the firm performance with dimensions of customer satisfaction, employee satisfaction and cost reduction

The knowledge creation, value creation and firm performance are the variables to be established for the concept/theory/conceptual framework (design artefact) to design new or changed processes that contribute to firm performance based on actionable knowledge. The knowledge of designed process is the outcome of process designing which is essential to perform activities of the process and contribute to firm performance.

2.3 Concept/conceptual framework

The relevant concepts/variables that are closely interact with process designing/process innovation and firm performance are deployed for establishment of concept/conceptual framework and the other concepts/variables that are not directly connected to both innovation and firm performance for process designing are excluded. Process is designed and validated first, then performance takes place on the designed process to contribute to firm performance. The process performance depends on process design but the process design is independent of process performance focusing on intended results to satisfy customers. The concept/conceptual framework of process innovation becomes strong providing the answer for how to establish concept of innovation to design process.

The ideation which brings ideas (processes) focusing on intended result. The comparison technique is used to select the best process among alternatives with examination of value creation visually. The contribution of new

or changed process to firm performance is challenging, if the design is accepted without examination of value of designed process/idea. The process designed with value creation is positively related to firm performance as it enhances firm performance than lapse related process. The value creation moderates the relationship between process innovation and firm performance by comparison of ideas(processes) designed by the concept of process innovation. Hence, the conceptual framework with variables of concept of innovation, value creation and firm performance with the relevant dimensions are given in Figure 2.

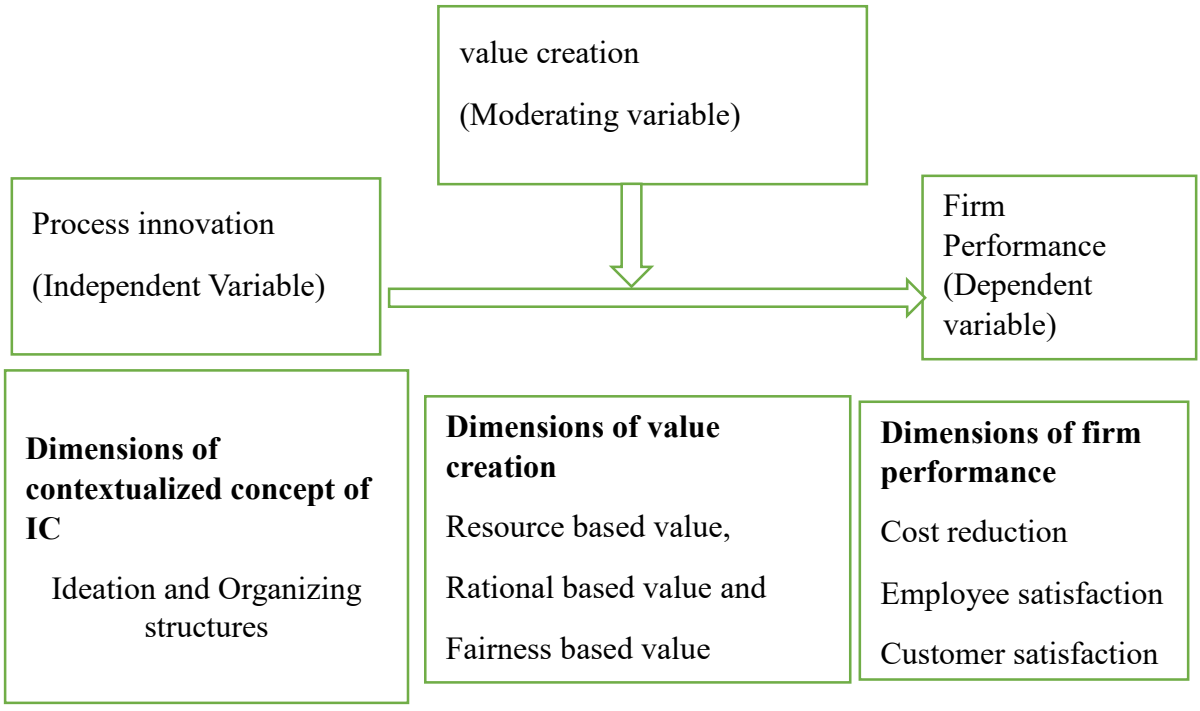

Figure 2 – Conceptual framework

The dimensions of concept of process innovation are ideation and organizing structures. The dimensions of value creation are resource-based value, rational based value and fairness-based value. The dimensions of firm performance are cost reduction, customer satisfaction and employee satisfaction.

The study of (Vom Brocke et al., 2020) suggests that the design science research (DSR) is a problem-solving paradigm that seek to enhance human knowledge via the creation of artifact. In this research a designed artifact (process innovation) is established to design new or changed object (artifact) with value creation to contribute to firm performance.

To demonstrate pragmatic validity of the concept of process innovation and determine relationship between variables of conceptual framework, a relevant qualitative research methodology given in section 3. Two cases of successfully designed process were used to derive content, interpret and find answers to demonstrate pragmatic validity of the concept of process innovation.

The thinking to generate ideas, organizing structures for activities of process for intended results vary from individual to individual might limit process innovation even though the knowledge on innovation is established. The individuals are recommended to begin deployment of the concept of process innovation to small issues initially and then continue for deeper challenging issues.

3. Research methodology

The researcher deployed findings from literature review to explore and derive concept of process innovation to design process, to address lapse related to firm performance and establish relationship between variables. The research methodology is established with suitable means of collection of contents from designed process/lapse related process to demonstrate pragmatic validity of the concept and interpret relationship between variables of conceptual framework.

3.1 Research philosophy (Pragmatism)

The process designing to address the lapses related to firm performance is practice oriented and thus the research philosophy is pragmatism. The concept of innovation is to be interpreted in the pragmatism paradigm with content derived from successfully implemented designed process to demonstrate deployment of the concept of process innovation to design process for lapses.

3.2. Research method (strategy) and choice

The specific research strategy is deployed by establishment of cases for the successfully implemented designed process instead of case studies (Saunders et al., 2012) with the choice of mono method of data collection (Saunders et al., 2012) rather than the use of multiple methods of data collection (Sekaran and Bougie, 2016) used in case studies. The multiple data collection method is inappropriate as there is a possibility of bias from respondents/participants and the multiple method challenges pragmatic validity of the content analysis to be derived for interpretation.

3.3. Type of data and time horizon

The concept of process innovation to design process is new and the data collection is challenging due to lack of knowledge on innovation (Raisal et al., 2019 and Ranawala et al., 2023). If the researcher is relying on primary data, then time taken for completion of the research with time horizon (Saunders et al., 2012) for the establishment of successfully implemented designed process is uncertain with the new knowledge. Hence the researcher used secondary data for the research. To demonstrate pragmatic validity, the researcher has chosen the successfully designed process reflecting true observation in the past. The process is identical with each other since the elements of processes are same. Hence a single process represents the entire process in the population of process and thus the transferability/generalizability is ensured with a single designed case.

3.4 Study setting

The lapses related to firm performance is categorized into two. The SME could face several issues when it is trying to exploit a business opportunity for which it has to address all the issues related to uncertainty simultaneously or else it might have to address challenging issue of product development or process development. The study setting for both are different and different way of observing issues and taking actions to address issues are arising. The issues related to business arises at various time and to be resolved at that time. For product development or process development planning of process or product should be performed simultaneously considering all activities and actions are dine with all interested partie simultaneously.

3.5 Sampling design

The purpose of the research is to interpret whether the concept of process innovation is deployable to design process and contribute to firm performance. For that appropriate sample is to be selected with strategy to derive appropriate content for analysis. The data is to be collected from the case of successfully implemented designed process rather than from participant/ respondents as they are unaware on the knowledge of innovation (Raisal et al., 2019 and Ranawala, 2023). The experience on system audits in ISO standards demonstrate researcher reflexivity focusing on gathering system related information from observation rather than views to ensure trustworthiness to establish true facts.

3.5.1 Study population

The objective of the research is to interpret whether the concept of process innovation is deployable to design process and contribute to firm performance. The concept is established to design processes to address the lapses related to firm performance. Process can be established with the determination of intended result for a lapse. Hence, the lapses are the study population.

3.5.2 Sampling technique

Selection of appropriate sample for interpretation is challenging, as the findings of (Raisal et al., 2019 and Ranawala, 2023) reveals that lack of knowledge on innovation is one of the reasons for the failures/barriers of SME performance. It requires knowledge on selection of suitable sample to represent the characteristics of designed process/lapse related process and the concept of innovation. In this research sample of highly challenging lapse (issue) and a new venture which had multiple issues related to uncertainty is selected purposely from the lapses which has been addressed by successfully implemented designed processes at present but prevailing as lapses prior to addressing.

3.5.3 Sample size

The qualitative research indicates that the sample size depends on theoretical saturation where no any new information emerges in repeated cases (Sekaran and Bougie, 2016). The sample size for the research is depending on various factors, even though the concept is matured to design process. The success on implementation of designed process depends on determination of activities of the process by organizing structures, sequence and interaction of activities and knowhow development/knowledge creation on the activities of the process. A single successful implementation demonstrates theoretical maturity. However, the consequent designs are not only depending on the maturity but also the activities of organizing structures which are not related to theoretical maturity.

3.6 Data analysis

The qualitative data are collected from a wide variety of primary sources and /or secondary sources (Sekaran and Bougie, 2016 and Ferdous Azam et al., 2021). In this study the research setting is confined to only observation of successfully implemented designed process/lapse related process from single source and thus the data is collected, to avoid bias, is to be used to interpret the deployment of the concept of process innovation.

To interpret the content, the description of activities of process, intended result, sub processes of the process are to be detailed in the cases of designed processes. The cases are consisting of contents of designed process/lapse related process to determine relationship between variables and interpret the deployment of the concept of process innovation to demonstrate pragmatic validity.

3.6.1 Data collection

The lapses representing the characteristics of concept of process innovation is selected to establish case of designed process. The content derived from the design is to be used to interpret the deployment of the concept of innovation to design process, demonstrate pragmatic validity and establish relationship between variables.

3.6.2 Data analysis

The data analysis is to be performed with the content derived from cases of designed process/lapse related process. The study is different from other qualitative research since the research is confined to actionable knowledge derived from single source and content derived from two successfully implemented designed process/lapse related process.

To demonstrate pragmatic validity of the contextualized concept of process innovation and establish relationship between variables, it is required to collect content from designed process/lapse related process for interpretation. For that two case from successfully implemented designed process for a business venture and a challenging lapse were selected.

4. Discussions

The discussions help to determine unexpected findings (interested results)/key findings, to find answer for the research question on how the concept of process innovation was established to design process, how to demonstrate pragmatic validity of the concept and determine relationship between variables of conceptual framework. The findings are to be interpreted with the existing literature to determine the contribution of the process innovation within the context of innovation. The implications, significance of research, limitations, and recommendations and future research on EO are to be discussed in detailed.

4.1. Unexpected findings (interested results)

The cases provide evidence that the concept of process innovation EO addressed all the interesting novel issues for the case of home gardening and challenging issue on changeover from hard form of document control system to soft form of document control system. It is impossible to find answer from corrective action specified in (ISO 9001, 2015) standard for the challenging issue and ovel issues with cause identification without designing

process. The interested outcome of key findings/themes are value creation, organizing structures, and intended results are to be briefed here

4.1.1 Organizing structures

There are two types of organizing structures designed for innovative value creation as per the evidence from the case. These are organizing structures with interested parties and organizing structures without interested parties.

The organizing structures with interested parties require tree diagram and sequence and interaction of activities of process for process innovation which can be observed in soft form of document control and hard form of document control. Hard form of document control was consisting of different activities to soft form of document control for a particular intended results of reading documents. Interested parties of hard form of document control is document distributor, user and system auditor. Interested parties of soft form of document control is document control officer, user, system auditor and IT officer.

The organizing structures without interested parties require individual knowledge creation with sequence and interaction of activities only to address the issues which was visible on home gardening with multiple novel issues. The specific features are cost effective natural water distribution system and grounding plants with the consideration of capillary effect helped to save cost and be able to manage with rain water harvesting. The customer needs on taste and softness of produce is predetermined from observation and validated with customer through a reliable sale outlet. The solutions helped to overcome uncertainty in the market and bring competitive advantage against massive produce arising from competitive environment.

Organizing structures enlighten the process which is considered as “black box” by SME (Dossou-Yovo and Keen 2021). The process is consisting of activities. To achieve intended results the process owners and interested parties should know each other and without knowledge on the organizing structure they will not be able to work together to achieve intended results and contribute to firm performance. The sequence and interaction of activities

and sequence and interaction of sub processes are essential to achieve intended results. The outcome of an activity affects the outcome of interacting activities proceeding to the activity and hence overall intended result of the process. Hence organizing structures are playing important role in process designing and process performance.

4.1.2 Intended results

The intended results play a major role on providing framework to address lapses. The solution for a lapse provides an idea of intended results and it is the basis for generating ideas (processes) for the intended results. The best idea is selected for designing process among alternatives with comparison of value creation of each design focusing on firm performance indicators, i.e., cost, customer satisfaction and employee satisfaction. In the case of document control change over, the soft form bring benefits in terms of cost, customer satisfaction and employee satisfaction. Although the research is confined with intended results for the lapse related to firm performance, the intended results for the issues in other fields also determined and solutions can be determined for the issues in other fields.

4.1.3 Value creation

The value creation plays several roles for contribution to firm performance. It acts as determinants of value creation of theories to contribute for firm performance, in theoretical framework. In conceptual framework, the value of dimensions of variable is determined with examination of value as per the evidence from case. It acts as moderator to select the best idea (process) among alternatives. The value creation helps to determine relationship of independent variable with dependent variable focusing on value of process designing with firm performance. Further value creation moves theories forward focusing on process designing or process performance to contribute to firm performance.

4.2 Achievement of key research questions

The first research question is how is the concept of process innovation is established to design processes realizing or distributing value to contribute to firm performance? The concept of process innovation is established to design

processes with exploration of definition of process and establishment of definition for process innovation based on the definition of innovation given in the ISO standards.

The second research question is how to demonstrate the pragmatic validity of the concept of process innovation for deployment to design process? The case were established and key findings from the cases were found to be in alignment with the key theme. The outcome of design activities of process innovation, i.e., ideation, evaluation and organizing structures are were found in the cases. These demonstrate pragmatic validity of the process innovation.

The answer for the third research objective is achieved with designing processes to address lapses and contributing to firm performance as well as capturing the business opportunity with effective design focusing on value creation. Hence, there is a positive relationship between process innovation which helps to design process with value creation contributing to higher firm performance. The concept of value creation moderates the designs created in the ideation stage for water distribution and document control, helped to select best for contribution to firm performance.

4.3 Soundness/significance of the research

The soundness of the research is determined by the trustworthiness, i.e., credibility, dependability and transferability, maturity of the design and evaluation criteria of design science research (Vom Brocke, et al., 2020). The soundness of the research depends on how extent qualitative research methodology and design science research methodology is valid and reliable for the findings which are to be used in future research/practice.

4.3.1 credibility (internal validity)

In qualitative research samples are taken with different methods, such as interviewing, observation and questionnaire at different levels depending on the research (Sekaran and Bougie, 2016). In this research, the researcher used self only strategies to bring better result to avoid bias and contributing to SME performance. The experience of the researcher as systems "lead auditor/auditor" for the ISO system standards helped to gather factual (true) content from designed process focusing on system related approach rather than personal related approach. This knowledge is new to even for the researcher after careful exploration of definitions which are brought from Schumpeterian theory of innovation (Schumpeter, 1934(2008)) which helped to bring definition on innovation in ISO standards.

To avoids bias and collect suitable data, the only possibility is to derive contents from designed process and the best possible way is to identify the sample purposely from past experience of the researcher and successfully implemented designed business venture and addressing challenging issue in the process. The findings are genuine version of facts (true) compared to other qualitative research methodology and thus it ensures greater credibility.

4.3.2 Transferability (generalizability/external validity)

The transferability is depending on the characteristics of process innovation. Cases selected for designed process plays significant contribution to transferability.

4.3.2.1 Findings and settings

The described unexpected findings (interesting results) in 5.1 reveals that the key findings are able to be deployed to address novel issues with designing various types of processes and addressing challenging issue with different applications to cover wider range of disciplines. The transferability to design process with process innovation is enhanced with key findings and setting of organizing structures for activities of process to determine activities of the process and then derive sequence and interaction of activities to create knowledge on activities to perform and contribute to firm performance.

4.3.2.2 Relevant sampling

The designing of process for the highly challenging risks in a process and novel issues for the business venture in an uncertain environment were undertaken. This was considered in the research to ensure transferability. The relevant sample of lapses for the business venture and challenging lapse were selected from population to demonstrate, how to find solution to challenging issue and to exploit business opportunity in an uncertain environment with high risks. These provides an opportunity for the transferability of the concept of process innovation to a lesser risk business and less challenging issues since it was possible to deploy the concept for lesser risk business and lesser challenging issue.

4.3.2.3 Engagement with theories

The term "process" becomes important in management/business on producing products/services with sequence and interaction of processes (ISO 9001, 2015) contributing to firm performance. The process designing and process performance becomes essential for survival of firm in a competitive environment. The clear picture of process designing derive from Schumpeterian theory of innovation (Schumpeter, 1934(2008), ideation (Bolade and sindakis, 2020) and dimensions of value creation with integrated theories helped to derive concept/conceptual framework for process innovation to desifn process. It is impossible for other theories to stand alone and contribute to firm performance through process performance without the concept of value creation. Transferability of the concept is visible as it move forward other theories to contribute to firm performance either with process designing or with examination of value creation to contribute to firm performance, for example resourced based view (Barney, 1991) is moving forward towards process designing to reduce waste while value creation help to procure better resources with value creation to contribute to firm performance.

4.3.3 Theoretical saturation

The general rule in qualitative research is to sample until not getting new information or no longer gaining new insights. (Sekaran and Bougie, 2016). If the concept is deployable to design a process which can be successfully implemented to bring intended results, reflects the theoretical saturation and then no new information about the

process designing emerges in repeated case. In this case the concept of process innovation is deployable to address all novel interesting issues to derive successfully implemented designed processes. Hence, the concept is strong enough to reach theoretical saturation, since theoretical saturation was reached with a single successfully implemented process.

4.3.4 Dependability (Reliability)

In this research how to design process is well standardized and documented systematically with the sequence of design activities of ideation and organizing structure for process innovation. The two design activities are performed as per the evidence from the case. The concept of value creation is deployed in the ideation stage to examine value creation and select the best process for designing. The value of each design can be examined for value creation and hence reliability of each designed process was ensured by examination of value creation.

4.3.5 Confirmability (trustworthiness)

In qualitative research trustworthiness (Shenton, 2004) is suggested with prove of findings grounded in participant data rather than researcher bias with demonstration of transparent and traceable mechanisms from raw data to final conclusions often known as audit trails. The research findings are grounded from observation of designed process to derive contents from design systematically to avoid researcher bias, instead of audit trail. The sequence and interaction of activities play a major role on replacing audit trail with transparent and traceable mechanisms and bring intended results from process due to the reflective (Sekaran and Bougie, 2016) nature of activities in designing process. Final outcome (conclusion) of the successful implementation of designed process depends on raw data derived from content of design, determination of sequence and interaction of activities, knowledge creation on activities of process and performing activities to bring intended results and succeed on implementation of design. Hence, the mechanism of sequence and interaction of activities ensure confirmability of findings grounded in the research based on success of implementation.

4.3.6 Evaluation with design science research

The proposed evaluation criteria in design science research of (Vom Brocke et al., 2020) is used. The first criterion is problem identification (importance, novelty and feasibility). To fulfill first criteria, the problem is identified with literature review on definitions of innovation and SME performance with exploration of grey areas with the determination of suitable definitions. This lead to interconnect the problems with novel approach linking independent variable, i.e., designed process which is consequent of innovation with dependent variable firm performance to make it feasible with the concept of process innovation to address novel interesting issues of a business venture and challenging issue of process related to firm performance for designing process.

The second criterion is solution design (simplicity, clarity and consistency). It is fulfilled with determination of relevant simple design activities with clarity by focusing on definition of process given in ISO standards. The consistency is established by examination of each design with the concept of value creation and selection of the best to ensure the consistent quality of designed process from the design artefact of the concept of process innovation.

The third criterion is solution instantiation (ease of use, fidelity with real world phenomena, and robustness). It is fulfilled with designing processes for the novel issues of the high-risk business venture in an uncertain environment and a challenging issue (robustness). This ensures fidelity to other low risk businesses/business ventures.

The fourth criterion of solution in use (effectiveness, efficiency and external consistency) are achieved by proper design of artefact, i.e., the concept of process innovation, careful research methodologies and synchronization of sampling to select lapses to demonstrate robustness and transferability/generalizability. The solution brought efficient effective design from design artefact of process innovation and external consistency is ensured with the concept of value creation to examine the value to contribute to firm performance.

4.4 Implications

The characteristics of key findings are transferable to various fields and different types of applications. This suggest that there will be an impact on the real-world scenario with broader deployment of the key findings in various discipline for future research/practice. It is essential to familiar with which key finding is to be used, where it should be used, when and how to find solution to the theoretical/conceptual issues as well as practical issues related to the fields.

4.4.1 Theoretical implications

The term process is important and vital in business/management. It is due to the reason that firm performance is depending on products/services which consequent of sequence and interaction of processes (ISO 9001, 2015). The evidence from cases suggests that process designing and process performance are result in products/services realization to contribute to firm performance.

Since the process is backbone of firm performance or business/management, without touching process or moving towards process, it is impossible to resolve conceptual/theoretical gap and thus this research is important to all researchers in the academia. Without understanding not only the key findings but also the other findings in the case, it is impossible to deploy the key findings to resolve conceptual/theoretical issues or address gap between theories and practice. Hence, the researchers must familiar with the key findings and use these key finding to bring better results from their research. It will help to align theories with practices by moving theories towards process or value creation to contribute to firm performance.

If the key findings are not used, then the research is not touching/focusing process and there is hardly any value addition from the findings to contribute to firm performance. This will affect the contribution of the research and the problems related to firm performance will be remaining as it is or else it will be deteriorating further with the new issues arising from existing issues. This will affect performance of SME and consequently impact the economy. The impact on economy will affect all people. Hence, it is essential to add value from research and

contribute to economy by using key findings in this research and providing better results for SME performance with improved theory.

4.4.2 Practical implications

The process innovation demonstrate how entire novel issues of a new business venture is resolved to contribute to firm performance in an uncertain environment. The process innovation must be used to design process with value creation for the intended result and the lapses related to firm performance should be addressed.

The concept of process innovation is not only useful to firm performance but also for the performance of individual activities that bring income/value. If the concept of process innovation is deployed, then it will bring more value/income to the individual activities. In case, if the concept of process innovation is not used the lapses are prevailing and restricting to gain income/value. The concept of process innovation is consisting of only two design activities. These are ideation and organizing structures. It could easily be used by any individual to deploy without any challenges. If the concept of process innovation is not used, it brings more unresolved issues and that will affect the individual quality of life. If it is related to firm/SME then it will affect the economy of the country and consequently all the people of the country is affected and deteriorating the economy. Hence, the knowledge of the key findings and value should be promoted and all must work for deployment of the concept of process innovation to reap the benefits.

The concept of process innovation should be deployed to address lapse related to firm performance. Researcher expects that future issues will be addressed with the concept of process innovation with widen deployment contributing to socio economic advancement with enhancement of quality of life.

4.5 Limitations and suggestions for future research

While the research is limited to a small purposeful sample rather than a shallow survey. This affects transferability of designing processes with the concept of process innovation for another business even though the researcher has chosen a high-risk business in an uncertain environment and a challenging issue. To address the limitation, future studies may focus on design of experiments with larger more diverse sample. There might be business

ventures with high risk and high challenging issues than the cases selected by the researcher and the future research may focus on deployment of the key findings to those high-risk businesses.

The research is performed with the experience of the researcher by observation of successfully implemented designed process. It is due to the reason that the knowledge on designing process is new to the researcher and thus identification and extraction of content from successfully implemented designed process by participant/respondent is challenging. This might affect the research with researcher bias. The limitation is overcome with the experience of the researcher in system audits with ISO standards focusing on process related facts rather than personal related. To overcome this limitation, future research with multiple method including interview with participants/respondents may be used.

The longitudinal study is not possible with limited resources and time constraints. This is due to the fact that the contextualized concept of EO to design process is new. The resources are limited to derive content from designed process due to lack of knowledge on process design. Hence the research is confined to deployment of the concept to the successfully implemented designed process from past experience to derive contents of designed process. This may not be limitation for the future research with the establishec knowledge on process innovation.

4.6 Recommendations

The process innovation is prerequisite to product innovation. The researchers/practitioners are recommended to familiarize with regards to ideation and organizing structures on existing processes considering their activities. Then it will help them to familiarize with the process and determine inefficiency or lapses. Then they will be able to address lapses and improve the processes. It will help to gain experience themselves and they will be able contribute for performance of the processes. It will bring satisfaction to them in addition to the recognition from society for their contribution. The individual performance will help to contribute to firm/SME ultimately reflect in socioeconomic development.

5. Conclusion

In this study, key findings of process innovation were derived from cases of a successfully implemented designed processes of a new business venture and a challenging process issue. These findings are essential to understand the concept of process innovation address risks, i.e., uncertainty and lapse by process designing and contributing to firm performance.

To establish the concept of process innovation, the definitions of innovation/innovation capability is reviewed, suitable definition for innovation is determined and from this definition the process innovation definition is discovered with exploration and justification to avoid ambiguity. The definition of process and discovered definition for process innovation together with relevant theories helped to develop concept/conceptual framework of process innovation. The two designed cases from successfully implemented designed processes were used to demonstrate pragmatic validity of the concept to design process and determine relationship between variables of established conceptual framework.

The content derived from successfully implemented designed process demonstrate the design activities and themes of the established concept of process innovation with ideation for generating ideas (processes), evaluation of ideas to select the best among alternatives and determine organizing structures for the selected process. The sample selected from lapses of business venture with highly uncertain environment to find solution to the novel issues for the business and a challenging issue were selected purposely to ensure transferability to lesser uncertain businesses and less challenging issues.

The research implies for extension of the Schumpeterian theory of innovation towards process innovation and it is essential to contribute to national economic development through SME since GDP contribution of SME is high. The process innovation brought two categories of organizing structures depending on the direct involvement of interested parties in the intended results of process and this suggest impact on addressing lapses with prior decision based on the requirements of interested parties in process designing.

The study contributed for advancement of knowledge on innovation EO by addressing the gap between theory and practice. It advances the Schumpeterian theory of innovation with process designing to innovate new objects. The concept/conceptual framework is useful for practitioners/researchers to perform research on activities of process and thus contribute to improve individual performance and thus firm performance .

The research is limited with a few samples to limited time, resources, lack of knowledge and previous study in designing process. In future researchers may focus on larger sample size, multiple methods of data collection with interviewing participants/respondents in addition to observation and deployment of the findings to higher risk business venture and higher challenging issues.

It is valuable to have knowledge on process innovation as it will help to resolve issues in activities of processes and ultimately bringing benefits to all. Finding solution to the issues will help to enhance quality of life, peace, harmony and socio economic development safeguarding the planet of the earth.

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